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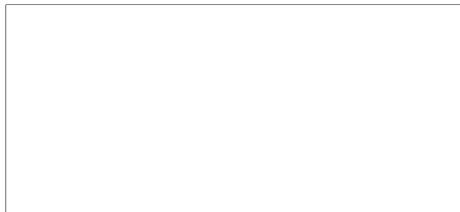
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**PHOTOGRAPHIC
INTERPRETATION
REPORT**

NATIONAL PHOTOGRAPHIC
INTERPRETATION CENTER

**UNUSUAL ACTIVITY AT SS-7 LAUNCH SITES
AND RAIL-TO-ROAD TRANSFER POINTS
USSR**



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UNUSUAL ACTIVITY AT SS-7 LAUNCH SITES AND RAIL-TO-ROAD TRANSFER POINTS

Summary

1. Unusual activity has been observed at 11 SS-7 launch sites and at four rail-to-road transfer points (RTP) between July 1971 and the latest satellite photography. In addition, an increase in the amount of SS-7 and other missile-related equipment has been noted at two ICBM/IRBM/MRBM rear depots.

2. The unusual activity at the launch sites occurred [redacted] and consists of the removal of missile erectors, the replacement of some of these erectors with missile transporters, the removal of missile support rings from missile erectors, and restricted activity as evidenced by uncleared snow and light track activity at some launch pads and in some site support areas. It has been observed at Drovyanaya site 1, Kostroma sites 1-4, Perm sites 1 and 2, and Svobodnyy sites 1-4.

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3. The unusual activity at the RTPs consists of an increase in the number of propellant tank cars and missile rail cars observed, the haphazard parking of missile transporters, and variations in the handling procedures for SS-7 propellants. The variations in propellant handling at the RTPs include SS-7 propellant transporters in the SS-11 propellant facility, SS-7 fuel transporters connected to a single-domed rail car through the SS-11 oxidizer transfer rack, and two SS-7 oxidizer transporters connected to single-domed rail tank cars through the SS-11 fuel transfer racks.

4. This activity occurred at RTPs at Drovyanaya, Kostroma, Svobodnyy, and Teykovo [redacted]

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5. An increase of about 250 vehicles and missile-related equipment was observed at the Glazov rear depot [redacted]. The equipment included 80 SS-5/7 fuel transporters, 86 SS-5/7 oxidizer transporters, 50 prime movers and 20 missile rail cars. An increase of about 200 missile-associated vehicles was observed at the Alkino rear depot [redacted]

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6. A complete description of this unusual activity, a listing of the status of the 11 SS-7 launch sites when observed on the latest available photography, and a table of the count of rail cars and single-domed rail tank cars at four rail-to-road transfer points are included in this report.

Introduction

7. The unusual activity described in this report has occurred at five ICBM complexes, at two in the eastern USSR, two in the western USSR, and one in the Urals. All of the complexes where this unusual activity has been observed support both the SS-7 and the SS-11 missile systems.

8. The normal activity at these complexes and rear depots is as follows. The launch pad at SS-7 sites includes a mobile missile erector which has two rings atop it to support the missile during the time the missile is elevated to the vertical position for launch. At most SS-7 launch sites described in this report, equipment usually present includes six fuel transporters and six oxidizer transporters parked in orderly fashion in designated areas. In this summary, an erector without the missile support rings atop it is termed an "erector base."

9. The SS-7 fuel and oxidizer are transported to the complex in single-domed rail tank cars. The handling of the SS-7 propellants has previously been observed only in the SS-7 facility. This facility has transporter fill points and rail car transfer racks which are normally used to handle the propellant.¹ Neither of these two were in use in the instances mentioned in this summary when the SS-7 propellant transporters were observed at the transfer racks in the SS-11 propellant facility.

10. Previously observed SS-11 propellant handling procedures indicated that the fuel for this system is also delivered to the complex in single-domed rail cars. However, the oxidizer for this system is delivered in triple-domed rail tank cars.

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11. The report includes two tables. Table 1 is a summary of the status of the 11 SS-7 launch sites when seen on the latest available photography and Table 2 is a summary of the count of missile rail cars and single-domed rail tank cars at RTPs.

12. The following is a brief description of the activity at the launch sites, the RTPs, and the two ICBM/IRBM/MRBM rear depots.

Description

Drovyanaya

Launch Site Activity

13. [redacted] the missile erectors and propellant transporters had been removed from launch site 1 (Figure 1). Missile transporters were observed on the launch pads in the position usually occupied by missile erectors. When observed [redacted] the missile transporters were still present and trucks and general purpose vehicles were parked in the fuel transporter parking area. 25X1 25X1

RTP Activity

14. [redacted] one missile rail car and four single-domed rail tank cars were near the SS-11 propellant facility. [redacted] eight missile rail cars and 11 single-domed rail tank cars were observed near this facility, an increase of seven missile rail cars and seven single-domed rail tank cars. 25X1 25X1

Kostroma

Launch Site Activity

15. [redacted] at launch site 1, two missile transporters were in front of the left ready building. The missile erectors were near the rear of the launch pad. [redacted] the erectors were in their usual positions but the missile support rings had been removed. Light track activity was also observed. The snow had not been removed from the loop road or the launch pads. This launch site was observed [redacted] on low-resolution photography which precluded a detailed interpretation of the launch site. 25X1 25X1 25X1

16. At launch site 2 [redacted] the missile support rings also had been removed from the erectors, only light track activity was observed, and the snow had not been removed from the loop road or the launch pads. When observed [redacted] the interpretability of the photography precluded the identification of the missile erectors or determination if they had been replaced by missile transporters. 25X1 25X1

17. At launch site 3, [redacted] the erector bases were in place; however, the missile support rings had been removed. The snow had not been removed from the loop road or the launch pads. Unidentified material was dispersed on the apron in front of the right missile-ready building. This launch site was observed [redacted] however, due to the limited interpretability of the photography, the status of the missile erectors could not be interpreted. The propellant transporters have not been observed at this launch site [redacted] 25X1 25X1 25X1

18. [redacted] the snow had not been removed from launch sites 1, 2, or 3; however, the launch pads at launch sites 4, 5, 6 and 7 had been cleared and the support areas appeared to be fully occupied. 25X1

19. At launch site 4 [redacted] the missile erectors were on the snow cleared launch pads and the site support area appeared to be fully occupied. When observed [redacted] the erectors possibly had been replaced by missile transporters and the six fuel transporters were observed in their usual positions at the launch site. 25X1 25X1

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RTP Activity

20. [redacted] three missile rail cars were on the rail spur in the SS-7 propellant facility and eight single-domed rail tank cars were apparently entering the same facility. Three probable SS-7 oxidizer transporters, without prime movers, were in the SS-11 propellant facility. [redacted] six missile rail cars were in the SS-7 propellant facility and six single-domed rail tank cars were in the SS-11 propellant facility. Two SS-7 oxidizer transporters were parked on the loop road near the SS-11 oxidizer storage building.

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Perm

Launch Site Activity

21. [redacted] at launch site 1, seven vehicles were on the left pad and only the erector base was on the right pad. Unidentified activity was observed in front of the left missile-ready building. [redacted] a piece of equipment was to the rear of the left pad and 13 vehicles were on the right pad. Two probable vehicles were also in front of the right missile-ready building. The poor interpretability of the available photography precluded a more complete interpretation of the launch site.

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22. At launch site 2 (Figure 2) [redacted] six SS-7 fuel transporters without prime movers were on the loop road between the launch pads. Six additional SS-7 fuel transporters were on the site access road at the site entrance. Two more SS-7 fuel transporters were on the complex road near the site. Two additional SS-7 fuel transporters were a short distance further down the complex road.

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23. When observed [redacted] the missile erectors had been removed from both launch pads and replaced by missile transporters.

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RTP Activity

24. Unusual activity similar to that observed at the four other RTPs was not observed at the Perm RTP; however, [redacted] one unusual occurrence was observed at this RTP. Three SS-7 oxidizer transporters were observed on flatcars near the point where the rail spur enters the RTP. No other unusual activity was observed on photography [redacted] which is the only available photography during the period when the unusual activity was observed at the other RTPs.

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Svobodnyy

Launch Site Activity

25. [redacted] at launch site 1, the missile erectors had been removed from both launch pads and the snow had not been cleared from the launch site or from the support area. When observed [redacted] the snow had not been removed from the launch pads and the erectors were not present. Only light track activity was observed at the site and in the support area.

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26. At launch site 2 [redacted] two erector bases were at the edge of the left launch pad. [redacted] no missile activity has been observed and only light track activity has been seen. When observed [redacted] no missile equipment was present at the launch site or support area, the missile erectors were not present, and the snow had not been removed from the launch pads or the loop road.

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27. At launch site 3 [redacted] SS-7 missile transporters had replaced the erectors on both launch pads. When observed [redacted] the missile transporters were still present. The propellant transporters were not in place or observed elsewhere in the launch site and the snow had not been removed from the loop road or the launch pads. Light track activity was observed in the support area.

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28. [redacted] at launch site 4, the missile erectors had been replaced with SS-7 missile transporters. When observed [redacted] the missile transporters were still present and three trucks [redacted] Snow had not been removed from the launch pads; however, the roads in the support area were cleared of snow. 25X1 25X1 25X1

RTP Activity

29. [redacted], three SS-7 missiles on transporters were being towed toward the SS-11 RIM facility, a convoy of six fuel transporters was on the road apparently leaving the installation, and four missile rail cars and 12 single-domed rail tank cars were in the SS-11 propellant facility. A train with four more missile rail cars was near the loading dock. Seven SS-7 missile transporters, six house trailers, and two SS-7 oxidizer transporters without prime movers were in the SS-7 propellant facility. The missile transporters were parked in haphazard fashion. Equipment of this type is not usually seen in the SS-7 propellant facility. When these transporters have been seen at other RTPs, they were always parked in rows, side by side. 25X1

30. [redacted] ten single-domed rail tank cars, three SS-7 fuel transporters, and a probable fire truck were at one of the SS-11 oxidizer transfer racks. One of the fuel transporters was probably connected through the transfer rack to a rail car (Figure 5). The lack of a transfer van, the location of the operation, and the fact that the transporter fill points at the SS-7 propellant facility were not in use indicate that the fuel probably was being loaded into the tank car. The transfer van would be required to assure quality control of fuel that was to be placed in a missile. 25X1

Teykovo

31. [redacted] at the RTP, 28 single-domed rail tank cars and two triple-domed SS-11 oxidizer rail cars were in the SS-11 propellant facility. Fifteen of these tank cars were near the SS-11 oxidizer transfer racks (Figure 6). The oxidizer for the SS-11 missile system is delivered in triple-domed rail cars such as the two at the north end of the rail spur on Figure 6. Six missile rail cars and two security rail cars were near the SS-7 propellant transfer racks. Another missile rail car was at the loading dock in the receiving area and one SS-7 missile was on a transporter in the ground support equipment (GSE) maintenance area. 25X1

32. [redacted] the rail tank cars in the SS-11 propellant facility were still present. The SS-7 missile in the GSE area and the missile rail car at the loading dock had been removed and were not identified elsewhere in the complex. 25X1

33. [redacted] five single-domed rail tank cars were at the SS-11 fuel transfer racks and eight more were at the SS-11 oxidizer transfer racks. Nine missile rail cars, four security rail cars, and three box cars were near the SS-7 propellant transfer racks. 25X1

34. [redacted] four missile rail cars and one security rail car were near the SS-7 propellant transfer racks. In the SS-11 propellant facility (Figure 7), seven single-domed rail tank cars were at the SS-11 oxidizer racks. Five more were at the SS-11 fuel transfer racks. One SS-7 oxidizer transporter was at each transfer rack and was connected to a tank car through the transfer racks. A third SS-7 oxidizer transporter, a probable fire truck, and a small vehicle were nearby. The location of the operation, the absence of a transfer van, and the fact that the SS-7 transporter fill points were not in use indicates that the rail car was probably being filled from the transporter. 25X1

Activity at Rear Depots

35. A review of the photography of ICBM/IRBM/MRBM rear depots showed an increase in the number of vehicles and equipment at both the Alkino and Glazov rear depots.

36. At the Alkino ICBM/IRBM/MRBM rear depot, the increase was approximately 200 missile-associated vehicles [redacted] Heavy haze prevented the identification of these vehicles. 25X1

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37. At the Glazov ICBM/IRBM/MRBM rear depot (Figure 8), the total increase was approximately 250 vehicles and missile-related equipment. This increase took place

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and included 80 SS-5/7 fuel transporters, 86 SS-5/7 oxidizer transporters, 50 prime movers, and 20 missile rail cars.

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Table 1. Status of SS-7 Launch Sites on Latest Available Photography

Complex	Launch Site	Type	Equipment Observed on Launch Pads
Drovyanaya	1	IIB	Missile transporters
Kostroma	1	IIB	Rings removed from Erectors
	2	IIB	Rings removed from Erectors
	3	IIB	Rings removed from Erectors
	4	IIB	Possible missile transporters
Perm	1	IIB	Erector removed from right pad and an unidentified object on left pad
	2	IIB	Possible missile transporters
Svobodnyy	1	IIB	Erectors removed from both launch pads
	2	IIB	Erectors removed from both launch pads
	3	IIB	Missile transporters
	4	IID	Missile transporters

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Table 2. Count of Missile Rail Cars and Singled-Domed Rail Tank Cars at RTPs

ICBM Complex	Missile Rail Cars	Singled-Domed Rail Tank Cars
Drovyanaya	9	11
Kostroma	3	8
	6	6
Svobodnyy	8	12
		10
Teykovo	6	27
	6	28
	10	13

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REFERENCES

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- 1. NPIC [redacted] RCA-01/0018/70, *ICBM Propellant Facilities at Rail-to-Road Transfer Point, USSR*, Jun 70 (TOP SECRET CHESS RUFF [redacted])

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